

Notice of Allowability

Application No.

10/659,157

Examiner

Deandra M. Hughes

Applicant(s)

HWANG ET AL.

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the IDS filed 10/27/04.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 10/27/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Deandra M. Hughes
571.272.6982

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steven Cha on Sept. 6, 2005.

In claim 1, the following lines have been amended:

- (LINE 1) "amplifier for amplifying" has been changed to --amplifier configured for amplifying--.
- (LINE 9) "circulator, and for reflecting" has been changed to --circulator, configured for reflecting--.
- (LINE 13) "four terminals for outputting" has been changed to --four terminals configured for outputting--.
- (LINE 15) "third ports for being" has been changed to --third ports configured for being--.
- (LINE 18) "splitter and for outputting" has been changed to --splitter and configured for--.
- (LINE 21) "splitter, for amplifying" has been changed to --splitter, configured for amplifying--.
- (LINE 23) "amplifying unit for amplifying" has been changed to --amplifying unit configured for--.

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- (LINE 26) "amplifying unit for amplifying" has been changed to --amplifying unit configured for--.

In claim 2, LINE 9, "to a second port f and for" has been changed to --to a second port and for--.

2. The following is an examiner's statement of reasons for allowance.

Independent claim 1 does not teach or make obvious *a second port of the circulator configured for reflecting S-band optical signals form among the optical signals outputted from the second port back to the second port of the circulator and outputting the ASE inputted into an interior of the optical fiber grating to the second port of the optical circulator* in conjunction with the other features of the claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Specification

3. An amendment to the abstract of the disclosure appears below. Authorization for this examiner's amendment was given in a telephone interview with Steven Cha on Sept. 6, 2005.

(LINES 1-2): "A wideband optical fiber amplifier that can amplify S-band optical signals, C-band optical signals and L-band optical signals" has been deleted.

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- (LINES 3-4):** “The wideband optical fiber amplifier includes a circulator for outputting optical signals inputted into a first port thereof to a second port thereof” has been changed to --The wideband optical fiber amplifier includes a circulator.--
- (LINES 5-6)** “S-band optical signals inputted from the second port thereof to a third port” has been changed to --S-band optical signals.--.
- (LINES 6-11)** “At least one optical fiber grating is used for passing the C- and L-band optical signals from among the optical signals outputted from the second port of the circulator, and for reflecting the S-band optical signals back to the second port of the circulator. The ASE is then input from an interior of the optical fiber grating to the second port of the circulator. An output unit outputs optical signals inputted into first to third terminals thereof to a fourth terminal thereof.” has been changed to --At least one optical fiber grating is used for passing the C- and L-band optical signals.--
- (Lines 11-13)** “A wavelength selective splitter outputs the L-band optical signals of the optical signals inputted into a first port thereof to a second port thereof and for outputting the C-band optical signals to a third port thereof connected the second terminal of the outputting unit.” has been changed to --A wavelength selective splitter outputs the L-band optical signals.--

Allowable Subject Matter

4. Claims 1-14 are allowed.
5. The following is an examiner's statement of reasons for allowance.

The prior art (e.g., US 6,437,907; Yoon et al.) does not teach or make obvious a *3-port circulator for recirculating ASE within three optical fiber amplifying units..*

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Drawings

6. The drawings filed 9/10/2003 are acceptable.

Information Disclosure Statement

7. The information disclosure statement (IDS) filed on 10/27/04 has been considered by the examiner and is found to be cumulative to the art of record.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hwang ('043, '912, '868), Song ('796, '570), Willner, and Yeniyay disclose ASE reuse in optical amplifiers.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deandra M. Hughes whose telephone number is 571-272-6982. The examiner can normally be reached on M-F, 8:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Deandra M. Hughes

Examiner

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